



Ludvig
Puusepp
125



Prof. Ludvig Puusepp during his first years in Tartu.



UNIVERSITY OF TARTU
ESTONIAN ACADEMY OF SCIENCES

LUDVIG PUUSEPP 125

Compiled by Ülla Linnamägi

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Foreword

On December 3, 2000, 125 years passed from the birth of one of the most famous Estonian medical scientists Professor Ludvig Puusepp. Being repatriated from Russia to Estonia in summer 1920 at the age of 44, Ludvig Puusepp was among those who contributed to the development of the national Tartu University. His versatile activities as a well-known physician, scientist and lecturer have been widely illustrated. However, his colorful life both as a person and a social figure includes several areas that have so far been largely neglected.

One of Puusepp's fields of interest upon which little light has so far been cast but which attracted him since his early period of medical activity in St. Petersburg is the surgical treatment of psychic disorders. Thanks to his psychosurgical operations in 1910 Ludvig Puusepp is considered, and with good reason, the pioneer of a branch of neurosurgery – psychosurgery.

Puusepp's activity as one of the founders of the French Scientific Institute deserves more attention. Also, he was among enthusiasts who initiated and supported the publication of the journal *Eesti Arst* (Estonian Physician) in 1922. Recognizing the important role of scientific societies in involving persons with research interest as well as in the quest for new knowledge, Puusepp founded the Estonian Neurologists' Society on November 26, 1922, and the journal *Folia Neuropathologica Estoniana* in the following year. He edited the journal until the last issue was published in 1939. An outstanding event was the appearance of the world's first journal of neurosurgery *Folia Neuro-Chirurgica Estoniana*.

Professor Ludvig Puusepp was among the twelve persons who were nominated in 1938 for the first membership of the Estonian Academy of Sciences. Being a world renowned scientist and physician, Ludvig Puusepp represented not only the medical science of the University of Tartu but also Estonia as a state. The values

created by him have been carefully preserved by his colleagues and, translated to the present day, still offer support.

On 3 December 1999, the Department of Neurology and Neurosurgery of the University of Tartu and the L. Puusepp Estonian Society of Neurologists and Neurosurgeons established a medal to be awarded to outstanding scientists in the field of neurology and neurosurgery. At the same time, the tradition of the Ludvig Puusepp lectures was initiated and the first lecture was delivered by Professor Ain-Elmar Kaasik, Member of the Estonian Academy of Sciences. The present collection includes the text of this lecture as well as the text of the Ludvig Puusepp lecture given in 2000 by Professor Rein Zupping.

The collection is dedicated to the 125th birth anniversary of Ludvig Puusepp. In addition to the texts of two Puusepp lectures, it contains articles that cast light on various aspects of L. Puusepp's life, seen through the eyes of both the neurosurgeon and the historian. Special thanks are due to Ken Kalling from the History Museum of the University of Tartu for the idea of compiling the collection as well as for the photos and an interesting contribution. The collection was published with support from the University of Tartu and the Estonian Academy of Sciences.

Toomas Asser

REFLECTIONS OF THE DEVELOPMENT OF ESTONIAN NEUROLOGY AND NEUROSURGERY IN INTERNATIONAL SCIENTIFIC PUBLICATIONS*

Ain-Elmar Kaasik

On December 2, 1920 the former Professor of Neurosurgery of St. Petersburg Psycho-Neurological Institute and of the Military Medical Academy **Ludvig Puusepp** (1875–1942) was appointed Professor of Neurology and Neurosurgery at the University of Tartu and Director of the Hospital of Nervous Diseases. He separated the teaching of neurology from the teaching of psychiatry and created a strong neurological and neurosurgical unit, which included an operating room as well as neuroradiology, physical therapy and laboratory services. Until 1940, Puusepp's service was the only highly specialized center for neurology and neurosurgery in the Baltic States. Numerous patients from Latvia, Lithuania, and also from Finland were treated in Tartu between 1920 and 1940. In the course of 22 years at the University of Tartu, Professor Puusepp enlisted trainee neurosurgeons from various countries, including Spain and Yugoslavia.

This brief introduction clearly indicates that it was Professor Ludvig Puusepp who established and developed Estonian neurology and neurosurgery. However, he had some eminent predecessors whose contribution to these specialties is definitely most considerable. More than a hundred years ago, in 1881 **Heinrich Unverricht** (1853–1912) described a new familial neurological disease characterized by the combination of myoclonias and epileptic seizures. Now the disease has been given the name of progressive myoclonus epilepsy of the Baltic

* The first Ludvig Puusepp lecture, Dec. 3, 1999.

type or the Unverricht–Lundborg disease. Heinrich Unverricht was born on September 18, 1853 in Breslau (now Wrocław in Poland). In 1877 he graduated from the Medical Faculty of the University of Breslau. His doctoral dissertation concerned inflammatory diseases of the lungs (“Lungenentzündung”). In 1889 Heinrich Unverricht was elected Ordinary Professor of Special Pathology and Director of the Medical Clinic of the University of Derpt (Dorpat), which is now known under the name of Tartu. In 1892 he moved to Magdeburg where he was appointed Director of the Hospital and in 1894 he was nominated Medical Counselor. He died in Magdeburg in 1912. In spite of the short duration of his work in Tartu Unverricht won popularity among his colleagues, pupils and patients. A year after Koch’s fundamental work he published a paper on tuberculin treatment. He also investigated the Cheyne–Stokes type of respiration disorder and clonic and tonic seizures. In 1891 his famous monograph *Die Myoklonie* was published. In this book he described a new familial progressive neurological disease, which he had observed in a family in the town of Paide (then: Weissenstein) in central Estonia. Two of these patients were later observed and investigated by Lundborg. As Unverricht described a family in Estonia it has been suggested that the Unverricht–Lundborg disease is a typical familial disease among Estonians and Finns. However, the original case records indicate that the family described by Unverricht was most likely of Baltic German origin. Professor Unverricht’s contributions have been reviewed in a paper dedicated to the early history of Estonian neurology and neurosurgery. There an interested reader can also find the references to the original publications (1).

One of the most distinguished surgeons of the second half of the 19th century was **Ernst Gustav Benjamin von Bergmann** (1836–1907), Professor of Surgery in Tartu (Dorpat) (1871–1878). He participated in three wars and acquired much experience in field surgery. The papers on skull injuries published during his Tartu period were fundamental in the development of neurosurgery as a new independent medical discipline (1).

In the course of five years (1995–1999) an international group of neurosurgeons and medical historians, namely Bengt Ljunggren and Christer Ljungman from Al Ain, United Arab Emirates; Ilo Käbin from Stockholm, Sweden; Michael Buchfelder and Oliver Ganslandt from Erlangen, Germany; and George Bruyn from Leiden, The Netherlands

published seven noteworthy papers concerning the Baltic–Estonian contribution to the development of neurology and neurosurgery (2–8). Ilo Käbin, a former surgeon and general practitioner, received his scientific degree of *medicine doctor (dr.med., Ph.D.)* in 1986 from the University of Lund for his capital monograph dedicated to the history of the Medical Faculty of the University of Tartu between 1802 and 1940 (9). Bengt Ljunggren, an eminent Swedish neurosurgeon, who has a permanent academic position in the Emirates, is also a well-known medical historian, who has visited Tartu in order to work in the University files and whose initiative and leadership created this international team.

Ernst von Bergmann has deserved particular attention among the authors (3). He was born in 1836 in Riga, Latvia, which at that time was controlled by the Russian Czar. He graduated from the Medical Faculty of the University of Tartu. There, in 1863, he defended his medical thesis “Zur Lehre von der Fettembolie”, which was based on experimental studies on cat liver impregnated with swine fat. From his gruesome war experiences (Prusso–Austrian conflict, Franco–Prussian and Russo–Turkish wars) surfaced von Bergmann’s interest in the deadly infectious complications and his search for a remedy. In 1875, von Bergmann introduced the Listerian principles of wound care in Tartu. In his hospital von Bergmann insisted on his personnel being equipped with white uniforms. He introduced steam sterilization as well as scrubbing of all involved hands before surgery. When an old friend and fellow surgeon visited von Bergmann and asked, “What’s new in surgery?” he replied, “Today we wash our hands before surgery.” The idea of using protective gloves was in the air, but there was no definite formulation as to the material they should be made of and when and how they should be used. Surgeons were slow to realize the immense potential of using gloves during operations; they lived comfortably in the false and naive belief that “gentleman’s hands are clean”. Baltic–Estonian surgeon **Maximilian Friedrich Werner Zoege von Manteuffel** (1857–1926) was the first strong advocate for the use of rubber gloves in the operating room in Europe (4). He inherited von Bergmann’s strict regimens and served as Professor of Surgery at the University of Tartu at the turn of the century. In their paper, dedicated to the centennial of the use of surgeon’s gloves, Ljunggren et al. admit that despite Zoege might have tumbled to the use of boiled rubber gloves in surgery by mere chance, he soon fully understood the

significance of this innovation. In his paper “Gummihandschuhe in der chirurgischen Praxis”, published in *Centralblatt für Chirurgie* in May 1897, he formulated clearly the recommendation for the use of boiled rubber gloves.

As a result of his war experiences von Bergmann developed an early interest in the management of traumatic brain injury (3). He was specifically interested in the pressure relationship between the various components of the intracranial cavity, the brain, the arterial and venous vasculature and the cerebrospinal fluid. In 1873, he published the first edition of his textbook on head injuries (*Lehre von der Kopfverletzungen*, Stuttgart, 314 pp.). This textbook was later enlarged and revised into a 560 page volume in 1880. It is important that 100 of the 560 pages in his 1880 edition were devoted to a discussion of normal and increased intracranial pressure, brain movement and pulsation, cerebral blood circulation and the effect of raised intracranial pressure on arterial and venous blood pressure and respiration. He rightly stated that raised intracranial pressure can be caused by an increase in either of the volumes of the brain, cerebrospinal fluid, or foreign mass such as a blood clot, a tumor, or an abscess (3, 5, 8).

After 24 years in Tartu von Bergmann decided in 1878 to leave this excellent academic outpost. In 1882 he was appointed Professor of Surgery in Berlin where he extended his surgery of the head to cerebral surgery, and in 1889 he published a monograph on cerebral surgery *Die chirurgische Behandlung von Hirnkrankheiten*, which was a landmark that undoubtedly set the standard for its day. Professor von Bergmann definitely was one of the founders of German neurosurgery.

Another former scholar of the University of Tartu who became a pioneer neurosurgeon was **Nikolai Nilovich Burdenko** (1876–1946). He belonged to the pleiad of highly-qualified surgeons who were brought up by Professor Werner Zoege von Mannteuffel, a surgeon of great compass and exceptional skill. Nikolai Burdenko graduated from the University of Tartu in 1906 and in 1917 he was elected Professor of Surgery. However, his neurosurgical career did not start before he left Estonia. First he went to Voronezh, and thereafter to Moscow where he founded a large school of neurosurgery (1). Although neurosurgery had already earlier developed in St. Petersburg, Burdenko was the founder of this specialty in Moscow and played a great role in establishing the neurosurgical service in Russia.

The specialty of neurology and neurosurgery in Estonia was actually established by **Professor Ludvig Puusepp**, who had received his medical education at St. Petersburg Military Medical Academy (1894–1899), where he had begun his training in neurology under the guidance of Professor Vladimir Bechterew (1857–1927). Until 1920 Puusepp worked in St. Petersburg and his contribution to the development of neurosurgery was immense. In a special paper Ljunggren et al. describe Puusepp's most successful career of that period (6). As early as in 1897, Bechterew had established a special operating room for the surgical treatment of his patients from the Department of Nervous and Mental Diseases at St. Petersburg Military Medical Academy. Most of the prominent surgeons of St. Petersburg operated there, but Professor Bechterew was far from satisfied with their surgical results. Already at the inauguration of the operating room, Bechterew had formulated his creed: "If today's neurologists must still request the help of surgeons, the coming generation will no longer need to do so, for they have seized the scalpel to perform what legitimately belongs to their realm." Puusepp, then a medical student, was greatly inspired by Bechterew's speech and decided to devote himself to neurology and surgery with a view to combining the two to form a new specialty. He performed his first neurosurgical operation in 1899 (6, 10).

Besides a busy daily clinical practice, Puusepp enthusiastically engaged in research and completed his dissertation "On the Cerebral Center, Regulating the Erection of Penis and Ejaculation", for which he was awarded the degree of Doctor of Medical Science in 1902. Puusepp later recalled that only Bechterew fully appreciated his efforts, whereas his other colleagues remained skeptical. Neurologists considered him a surgeon and surgeons regarded him as a neurologist (10, 11).

From 1904 to 1905 Puusepp served as a surgeon in the Russo–Japanese War, during which he also operated on patients with head and spinal wounds. Upon his return to St. Petersburg, he was entrusted by Bechterew with a department of 20 beds and an operating room where he could practice neurosurgery. In 1907 the St. Petersburg Psycho-Neurological Institute established a Chair of Surgical Neurology and Puusepp was appointed its first head. This was the first independent department and chair of surgical neurology not only in Russia, but also in the world. In 1910 Puusepp was elected Professor of this Chair. This made him the world's first professor of surgical neurology to emerge from a neurological background. He was now fully engaged in his new

specialty. In the St. Petersburg period Puusepp made several contacts abroad. Already in 1900 he traveled to Berlin, Hamburg, Copenhagen, London, Vienna and Paris, where he attended lectures and demonstrations by the famous Joseph Dejerine and Fulgence Raymond. In the summer of 1909, Puusepp traveled to the United States, visiting New York, Boston (Harvard University), Philadelphia and Washington (6). Finding that his freedom of thought was becoming limited in communist Russia, Professor Puusepp decided to leave and in 1920 departed for the University of Tartu in Estonia, his father's native country.

When Puusepp came to Tartu, he was nearly 45, already a distinguished neurologist and neurosurgeon who had also been highly successful in the field of research. In 1917 he had published his textbook *Principles of Surgical Neurology* in Russian. However, his best articles and books were written in Tartu, such as the monograph *Die Tumoren des Gehirns*, published in 1929. This voluminous work (726 pp.) was later translated into Spanish and printed in Barcelona in 1931. During 1932 to 1939, two and a half volumes of Puusepp's *Chirurgische Neuropathologie* came out in Tartu. In 1923 he started the publication of the journal *Folia Neuropathologica Estoniana*. Puusepp was the founder and the editor of the journal. In the course of 17 years 17 volumes were printed, which first and foremost contained articles by Tartu scientists but also published papers from numerous foreign contributors, including such outstanding scholars like Bechterew and Polenov (Leningrad), Rossolimo (Moscow), Mingazzini (Rome), Marburg (Vienna), Freeman (Philadelphia), van Bogaert (Brussels), Guillain and Alajouanine (Paris), Marinesco (Bucharest), Dandy (Baltimore), Walker (Chicago) and Ley (Barcelona) (10, 11). In their two extensive reviews, which profoundly analyze Puusepp's Tartu period, Ljunggren et al. conclude that the papers from Tartu reflect a high level of research, and important contribution to the diagnosis and treatment of brain tumors came from there (2, 7).

In 1929, a modification of ventriculography was described. It is generally assumed that Harvey Cushing discovered the phenomenon that increasing systolic and pulse pressure and bradycardia are the dreaded signs of rapidly increasing intracranial pressure, leading to cerebral herniation and fatal midbrain and medullary compression. However, Ljunggren et al. have revealed that thirty years before Cushing Ernst von Bergmann and Paul Cramer carried out meticulous

experiments on the relations between brain pressure and arterial and venous blood pressure (8). Nearly 30 years before Nils Lundberg introduced his epoch-making clinical monitoring of intracranial pressure, Puusepp announced a method for recording intracranial pressure during ventriculography. This innovation demonstrates how far ahead of his time he was (7). In 1932, fresh data on vertebral discogenic damage to the cauda equina were presented. In 1939, an extensive review of cerebral angiography and surgical treatment of cerebral aneurysms was published. Several papers were devoted to various nervous diseases and new surgical approaches, such as the Puusepp sign of the fifth toe and the Puusepp syringomyelia operation. The quality of Puusepp's writing and editorial work was outstanding. He was considered a superb teacher and model lecturer not only by medical students, but also by the general public (2, 7, 10, 11).

Many neurologists and neurosurgeons throughout the world maintained close contacts with Puusepp. At the 700th anniversary celebration of the University of Padua in 1922, he was given the title of honorary doctor. In the same year he founded *L'Institut Scientifique Français de Tartu*. In 1929, he received an honorary doctorate at the Stephen Báthory University in Wilno (Vilnius), then Poland. He traveled extensively and almost every year between 1922 and 1937 visited France; he presented a series of lectures at the Sorbonne in 1924 and was awarded the prestigious French Legion of Honor. In 1930, Puusepp visited the United States again and met with Cushing. In 1938 he became one of the first 12 Members of the Estonian Academy of Sciences.

The cited papers by Ljunggren et al., especially three of them (2, 5, 7), are particularly valuable for the readers who do not know much about the history of Estonia. These articles give a condensed but very realistic background of



Honorary doctor of the University of Padua.



Honorary doctor of the University of
Wilno (Vilnius).

the country, nation, neighbors, history, culture and education.

It is evident that Professor Ludvig Puusepp was quite well known in the Western World of the 1920s and 1930s. However, when in the 1960s it became, very slowly, again possible to develop contacts with the colleagues on the other side of the "iron curtain", we soon learned that the situation had dramatically changed. During my first sojourn in Lund, Sweden, on the basis of the scholarship from the *Svenska Institutet* I experienced that the name of Ludvig Puusepp was largely unknown not only to Swedish colleagues but to a rather international community whom I met during almost a year in 1967/1968. On the other

side, Professor Puusepp was not even mentioned in the historical introductions of Russian textbooks of neurosurgery or historical reviews, e.g. by Mikhail Yulyevich Rapoport, 1965. Estonia had been cut off from the West and the official Soviet Russia ignored the man who had left the country after the communist revolt. An additional reason might have been that the world had become English-speaking but Puusepp's papers were published predominantly in German and in French. From this background it was very encouraging to meet Professor Adolfo Ley, the eminent Spanish neurosurgeon, at the European Neurosurgical Meeting in Prague in 1971. Although already semi-retired, Professor Ley remembered well his year under the guidance of Professor Puusepp in Tartu and encouraged me to remind the profession about him. However, due to several reasons it was not before 1981 when my teacher Professor Ernst Raudam and myself published a paper in Professor Paul C. Bucy's *Surgical Neurology* (10) and somewhat later in a capital monograph about the history of

neurosurgery (11). Nevertheless, the cited papers by Ljunggren et al. are most striking by their profoundness of information and interpretation. The reference list of the most important paper (7) contains 125 citations and presents all Puusepp's valuable publications. Another paper (2) names briefly his best known pupils: **Johannes Riives** (1895–1971), **Voldemar Üprus** (1902–1956) and **Ernst Raudam** (1915–1992).

And last but not least. It is not easy to create a picture of a person who has passed away long ago. However, an attempt has been made on the basis of reminiscences of contemporaries, and particularly, Puusepp's daughter Liivia, now a retired Associate Professor in rehabilitation. The Puusepps lived consistent with the rank of a professional family, in an eight-room villa with a large garden in the center of Tartu. He and his wife were sociable and truly democratic and frequently entertained guests of diverse origin. Puusepp's daughter vividly remembers a regular guest, a native of Africa, at their dinner table, an event that would have been most uncommon in those days and in that corner of the world. The professor was also very fond of gardening (7). Professor Ludvig Puusepp was an extraordinarily dynamic person. He was always full of ideas and was able to express his interests sharply. He was certainly an eclectic, perhaps even an eccentric, who liked a changeful life and, certainly, appreciation. He hated defeat, even in games such as tennis, chess and bridge, which he enjoyed whenever he had an hour to spare. However, he very much liked communication with common people and always welcomed the advice and opinion of his staff members (10, 11).

“Puusepp is probably not as well known as he deserves among Westerners because his many publications and textbooks were published in Russian, Estonian, German or French” (7). Professor Bengt Ljunggren and his colleagues have made a remarkable contribution to shed some light upon this a bit shaded area of history.

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EVIDENCE BASED MEDICINE: AN APPROACH TO CLINICAL PROBLEM-SOLVING*

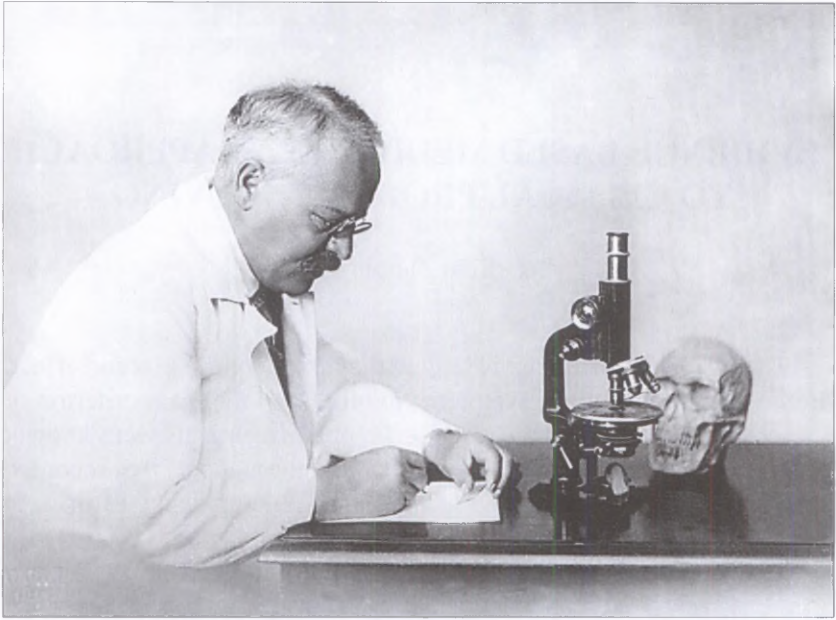
Rein Zupping

The history of medicine is largely the history of the placebo effect. Before the 20th century, symptomatic relief was the main criterion of the physician's art. No disease-specific pharmaceuticals were known. The respected position of the physician throughout the recorded civilization must be attributed to the remarkable tendency of man, in his distress, to respond to dummy medication.

Medicine as a modern science is a recent development, while medicine as an art has a long history. During the last decades, the medical science has greatly advanced, and medical information has enormously increased. In clinical practice taking care of patients generates many questions about diagnosis, prognosis and treatment that challenge health professionals to keep up to date with medical literature. The challenge in keeping up with the relevant literature is its huge volume. Busy doctors have never had time to read all journals in their disciplines. There are, for example, about 15 clinical journals on neurology that report studies of direct importance to clinical practice. In one year these journals publish over 3000 articles. To keep up with the latest developments the doctor would have to read about 10 articles a day every day a year.

Practicing evidence based medicine is one way for clinicians to keep up with the exponential growth of medical literature by improving our skills in asking questions, finding the best evidence, critically appraising it, integrating it with our clinical expertise and our patients' features, and applying the results in clinical practice (1, 2). Evidence based medicine can be practiced in any situation where there is doubt about an aspect of clinical diagnosis, prognosis or management.

* The second Ludvig Puusepp lecture, Dec. 8, 2000.



Prof. Puusepp summarizing his experience in Tartu.

Evidence based medicine is judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. Individual clinical expertise is the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice (2, 3). Best available external clinical evidence is clinically relevant research, especially from patient centered clinical research into the efficiency and safety of therapeutic, rehabilitative and preventive regimens, accuracy of diagnostic tests. Good doctors use both individual clinical expertise and the best available external evidence, and neither alone is enough.

Clinical research has greatly changed over the last 40 years. The first randomized clinical trials were performed in the 1960s. It is now accepted that virtually no drug can enter clinical practice without a demonstration of its efficacy and safety in clinical trials. Moreover, the randomized trial method is being increasingly applied in surgical



Prof. Puusepp in his study in Tartu.

therapies and diagnostic tests. Meta-analysis is gaining acceptance as a method of summarizing the results of several randomized trials. Randomized trial has become the “gold” standard for judging whether a treatment does more good than harm (4).

Evidence based medicine is not restricted to randomized trials and meta-analysis. Some questions about therapy do not require randomized trials or cannot wait for the trials to be conducted. To find out about the accuracy of a diagnostic test, it is necessary to find proper cross-sectional studies on the patient’s clinically suspected relevant disorder. For a question about prognosis, proper follow-up studies are needed. Sometimes what is needed will come from basic science (4).

Evidence based medicine de-emphasizes intuition, unsystematic clinical experience and pathophysiologic rationale as sufficient grounds for clinical decision-making and stresses the examination of evidence from clinical research. Evidence based medicine requires new skills of the physician, including efficient literature searching and the application of formal rules for evaluating the evidence found in clinical literature (5, 6).



Prof Puusepp at home in Tartu.

The first step in the practice of evidence based medicine is the formulation of a clinical question. The questions can relate to diagnosis, prognosis, treatment or quality of care.

The second step is a search for the best available evidence. There are now several electronic databases with bibliographic data, abstracts or full articles, available via the Internet. The best known are The Medline, Best Evidence and The Cochrane Library. There are an increasing number of journals, such as *Evidence-Based Medicine*, that review important papers.

The third step is to evaluate the evidence for its validity and clinical usefulness. However, a large proportion of published research lacks either relevance or sufficient methodological rigor to be reliable enough for answering clinical questions. To overcome this, several structured questionnaires have been developed that enable individuals without research expertise to evaluate clinical articles.

The strength of evidence is classified as follows.

Class I. Evidence provided by one or more well-designed controlled clinical trials.

Class II. Evidence provided by one or more well-designed clinical studies such as case-control studies, cohort studies and so forth.

Class III. Evidence provided by expert opinion, non-randomized historical controls and one or more case reports.

Having identified the evidence, clinicians can either implement it directly in patient's care or use it to develop hospital guidelines.

From an ethical perspective, the strongest arguments in support of evidence based medicine are that it allows the best evaluated methods of health care and useless or harmful methods to be identified and enables doctors to make better informed decisions (7). Moreover, evidence based medicine can help doctors make better use of limited resources by enabling them to evaluate clinical effectiveness of treatments.

Evidence based medicine is not the "cookbook" of medicine. External clinical evidence can inform, but can never replace individual clinical expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision.

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**A FORMER MEDICAL JOURNAL.
COMMENTS ON THE *FOLIA*
NEUROPATHOLOGICA ESTONIANA (1923–1939)**

Ain-Elmar Kaasik

In 1975, during my sabbatical months in Lund, Sweden, my good friend Ilo Käbin, M.D. Ph.D. asked my opinion about the journal *Folia Neuropathologica Estoniana*, which had been founded in 1923 by Professor Ludvig Puusepp. In the course of 17 years he edited 17 volumes, which were printed in Tartu, Estonia. Dr. Käbin was in busy general practice in Landskrona but all his spare hours were engaged by research into the history of the Medical Faculty of the University of Tartu. This enormous work was completed in 1986 when he brilliantly defended his voluminous monograph at the University of Lund and received the degree of *Medicine Doctor* – Doctor of Medical Sciences (1). Always a profound scholar, Dr. Käbin hesitated to evaluate Puusepp's capital contribution and asked my specialist's view. I felt rather uneasy to admit that, although I knew the existence of *Folia* and the other valuable contributions by Puusepp (2–5), I had only very superficially turned over the leaves of these historical publications. Nevertheless, Käbin's interest became a challenge for me and after I returned, I rather thoroughly went through all these texts and mailed my comments. I am happy that part of these comments were used in the cited monograph. In 1977 I published a paper in an Estonian medical journal in which I made an attempt to review and comment the *Folia* (6). Recently, an international group of Puusepp scholars has published a series of papers on the life and professional activities of this pioneer of neurosurgery. I am most moved and touched that most important of these works were dedicated to my modest personage and I was happy to find several of my former comments in their texts (7, 8). This stimulated me to revise my Estonian text from 1977 and translate it into English.

The first volume of *Folia* came out already in 1923 when Professor Puusepp had been in the position in Tartu only for three years. The introductory paper “Tumeur des III ventricule avec dystrophie adipo-génitale” was by Puusepp. Although Puusepp defined it as “gliosarcoma”, in retrospect, this appears to be an early account of craniopharyngeoma. This discrepancy is explained by the absence of generally accepted classification of brain tumors in these early days. The first volume contains also the results of Puusepp’s extensive study “Traumatische Kriegsneurose” (pp. 11–65), which is an extension of the problem he had investigated already in 1916. The importance of various functional disorders of muscle tone, movements and sensory systems is stressed. The problem of hysterical disorders, which we today call conversion (dissociation) states, was apparently greater than nowadays.

In the first volume of *Folia* Puusepp started a series of papers dedicated to the diagnostics and surgical treatment of brain tumors. The first article is titled “Die Geschwülste der Regio sellae turcicae und ihre operative Behandlung nach den neuen Frontoorbital-Methode” (pp. 389–427). Four years later, Herbert Olivecrona in Sweden published his classic *Chirurgische Behandlung der Gehirntumoren*. Puusepp himself continues to discuss this topic in the 6th volume (1926) in the papers “Die Operationstechnik der Hirntumoren” (pp. 127–149) and “Tumoren des Stirnhirns” (pp. 150–236), and also in the 7th volume (1927), viz. “Tumoren der Zentralwindungen” (pp. 15–72), “Tumoren der Parietallappen” (pp. 73–109) and “Tumoren der Schläfenlappen” (pp. 113–137). The 8th volume (1928) contains a similar paper about the posterior fossa tumors.

During his first decade in Tartu (1921–1931) Puusepp operated on 120 patients with brain tumors, which was a considerable series for these days. A 1935 contribution (vol. 15/16, pp. 53–62) by Adolfo Ley and Earl Walker gives an exhaustive review on the state of neuro-oncology of the period. Their series included 230 intracranial tumors. Most of them had been diagnosed on clinical symptoms; 20.4% had been diagnosed by ventriculography and only in 3.9% pneumo-encephalography was used. The overall early post-operative mortality was 21.5%. For today’s neurosurgeons with access to computed tomography and magnetic resonance imaging, it is hardly imaginable that 65 years ago only one out of five brain tumors was diagnosed with

the help of the neuroradiologic techniques available; the rest were diagnosed on clinical grounds.

All Puusepp's papers on brain tumors represent a thorough description of the clinical picture, diagnostics and operative techniques. However, today they represent rather textbook chapters than real scientific papers. Some years later – in 1929 – they were collected into his famous textbook (2).

Among the first years of issue, the combined volume 3/4 (1925) is the most remarkable. This issue is dedicated to the 25th anniversary of Professor Ludvig Puusepp's clinical work. Among numerous foreign contributors are such outstanding scholars as Bechterew and Polenov (Leningrad), Rossolimo (Moscow), Mingazzini (Rome), Marburg (Vienna), Freeman (Philadelphia), van Bogaert (Brussels), Guillain and Alajonanine (Paris) and Marinesco (Bucharest). This list is definitely an evidence of Puusepp's wide international contacts and recognition which was hindered neither by geographic-linguistic nor political barriers. The outstanding neuroanatomical study by Freeman "The columnar arrangement of the primary afferent centers in the brain stem of man" (pp. 27–101) indicates to the segmental structure of brainstem. This makes the 5th, 7th, 9th and 10th cranial nerves functionally similar to the spinal ones. Freeman stresses that the segmental principle is most pronounced in the structure of the spinal tract nucleus of the trigeminal nerve. The paper by Guillain and Alajoanaine "Le syndrome du carrefour hypotalamique" (pp. 228–249) is also most interesting. The nosography of this syndrome does not any longer sound modern but is still of great clinical importance. A meticulous histological study had resulted in a paper by H. Kull, the Professor of Histology *in spe* in Tartu: "Les régulateurs de la circulation dans les artères humaines" (pp. 376–385). This was definitely a pathfinder's work. It was only in 1932 that Chorobski and Penfield published their classical study on the subject (9). In this anniversary volume a paper by Levitski and Laos is dedicated to the Puusepp's reflex of the small toe. It is worth mentioning that in all volumes of *Folia* six papers described this reflex (Lewitski, Laos, Spiridis, Üprus et al.). Perhaps the most reasonable of these was the paper by V. and T. Požukovs from Prague "The clinical significance of the Puusepp reflex (reflex of the fifth toe)", vol. 8 (1929). Their conclusion is that the Puusepp reflex is present in the cases with a simultaneous lesion in the pyramidal and extrapyramidal tracts, especially in the caudal part of medulla or in the spinal cord.

Today we know that Puusepp wrongly concluded that this small toe reflex indicated a lesion within the extrapyramidal system. Numerous publications on the Puusepp reflex reflect rather the esteem of his colleagues towards Puusepp's personality as an outstanding scholar and teacher. This was the era when reflexes and, particularly, eponyms played a considerably greater role than today. We must admit that this sign is rare and its diagnostic importance is insignificant.

The 5th volume (1926) contains an interesting study by Kirschenberg "Der Einfluss des Alkoholes auf die Blutviskosität" (pp. 68–72). The author revealed that alcohol consumption results in an increased blood viscosity and that this phenomenon persists 6 hours. These data are fully consistent with the contemporary knowledge about the influence of ethanol on the microcirculation.

In the 6th volume (1926) Puusepp published the paper "Pseudo-Tumoren des Gehirns" (pp. 31–48), which describes and develops the concept of Nonne (1904) about benign intracranial hypertension. We must admit that this sector has remained somewhat obscure even today. However, probably the most remarkable contribution to this volume is "Über die Veränderungen der Nägel bei Polyneuritis arsenicosa" by Raudkepp and Wiburg. The authors described diagnostically important bright-white stripes on the nails of the patients with chronic arsenic poisoning. In these days this dangerous chemical was used also for medical indications, even as a roborant. Dr. Raudkepp was also the author of the most interesting (and intriguing) paper published in the 7th volume: "Die Resultate der Behandlung des Tetanus mit intralumbalen Injektionen von Antitetanusserum" (pp. 138–149). He treated 15 patients and only 2 perished. This is an astonishingly good result, keeping in mind a considerably high mortality of tetanus cases even in the conditions of modern intensive care. The explanation might have been that under the conditions of almost general absence of seroprophylaxis the bacteria often caused relatively mild cases of disease, which favorably responded to the treatment.

In 1929 Puusepp changed the name of the journal to *Folia Neuro-Chirurgica* (vol. 9), the first neurosurgical journal of the world. Seven years later, *Zentralblatt für Neurochirurgie* appeared in Germany, and 15 years later, in 1944, the first issue of the *Journal of Neurosurgery* appeared in the United States. The volume starts with the introduction, where Puusepp declares his endeavor to give a start to an international

Folia Neuro-Chirurgica.

(Folia Neuropathologica Estoniana.)

Prof. Ludovicus Puusepp

Redactor.

Priv.-Doc. Dr. med. J. Rives, Priv.-Doc. Dr. med. E. Weinberg,
Dr. med. W. Lindeberg

Secretarii.

Volumen IX.

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Title page of vol. IX.

neurosurgical journal. As in so many other things, he was ahead of his time. Because of lack of submitted material the journal was forced to return to its previous name and format. The 9th volume, the *Folia Neuro-Chirurgica*, contains Puusepp's paper "Eine neue Methode der Ventrikulographie" (pp. 183–186). This method was later improved by Ley, a Spanish neurosurgeon who worked in Tartu with Puusepp. In 1932 (vol. 12, pp. 165–177) he published his paper "La manométrie du liquide C.R. dans la clinique". The idea was to maintain the same intracranial pressure while removing cerebrospinal fluid from the ventricular system through replacement with air. This innovation took place nearly 30 years before Nils Lundberg introduced his epoch-making clinical monitoring of intracranial pressure (10) and demonstrates again how far ahead of his time he was. In the 10th volume (1931) Puusepp described a case where the tremor in Parkinson's disease was healed by transection of Burdach's fasciculus: "Cordotomia posterior lateralis (fasciculus Burdachi) on account of trembling and hypertonia on the muscles of the hand" (pp. 62–66). However, the subsequent attempts were unsuccessful and this method was abandoned. Puusepp was definitely one of the first to describe the thoracic outlet syndrome: "Kompression des Plexus brachialis durch die normale 1. Brustrippe. (Verengung de Trigonum costo-interscalenium)", vol. 11, 1931. This 11th volume was dedicated to the 10th anniversary of the service in Tartu. It contains an extensive text by deThuzo (Debrecen) "Myelography with Lipiodol" (pp. 12–219). Puusepp himself had always been interested in neuroradiology. During the same period, Olivecrona in Stockholm had established his reputation as brain surgeon through his close collaboration with the radiologist Erik Lysholm (11). Puusepp did the same by virtue of his association with the eminent radiologist Samuel (Schmuel) Zlaff, who had come as a student to Tartu from Lithuania. On Puusepp's recommendation he had visited Lysholm at the Serafimer Hospital in Stockholm. This collaboration resulted in the introduction of several neuroradiological methods in Tartu immediately after their invention. Myelography with Lipiodol was introduced in 1924, cerebral angiography in 1930. A review on the innovative introduction and development of neuroradiologic methods in Tartu is published in the 12th volume (1932) by Puusepp's future successor Johannes Riives. This paper is entitled "Über Ventrikulographie, Enzephalographie als diagnostische Hilfsmittel bei Nervenkrankheiten" (pp. 103–117) and

describes exhaustively the state of art of these days. In the double volume 15/16 (1935/1936), which was dedicated to Professor Ludvig Puusepp's 60th birthday, Riives published the article "Encephalography as a therapeutic measure against headaches of non-traumatic origin" (pp. 298–308). Riives continued this topic in the last, 17th volume of *Folia*, in the paper "Zur Frage über die therapeutische Bedeutung der Encephalo- und Ventrikulographie" (pp. 102–119). He concluded that pneumoencephalography significantly alleviates headaches in the patients with migraine, multiple sclerosis and post-concussional states.

Volume 15/16 contains a contribution from one of the most eminent neurosurgeons of the century – Walter Dandy published there his paper "The treatment of bilateral Ménière's disease and pseudo-Ménière's disease" (pp. 10–14) where he describes selective dissection of the vestibular nerve. The paper is particularly interesting from the viewpoint of neuroanatomy and neurophysiology.

In 1934, Mixer and Barr published their classic paper on ruptured intervertebral discs (12). By then, Puusepp had already extensively described degenerated disc disease and used myelograms to diagnose disc herniations – which he called *Ekchondrom* – in his *Chirurgische Neuropathologie*, published in 1933 (4). Furthermore, already in 1932, in the 12th volume of *Folia* he had published the paper "Kompression der Cauda Equina durch das verdickte Ligamentum Flavum. Tumorsymptome, Operation, Heilung" (pp. 38–40). Apparently, Puusepp was not very far from understanding the enormous importance of degenerative vertebrogenic disorders in the development of radiculopathic syndromes. The 12th volume contains also a paper by Zlaff "Über Spondylolisthesis and Pseudospondylolisthesis" (pp. 65–76), which formulates clear and definite diagnostic criteria and gives an explanation of the pathogenesis of pseudospondylolisthesis. Another important article by Zlaff is published in vol. 15/16 (1935/1936): "Klinische Beobachtungen einiger Zwischenwirbelshreiben-Veränderungen", where he describes the "*Schmorl hernias*" and other degenerative vertebral osteochondrotic (spondylotic) changes.

In 1926, Puusepp introduced a new radiologic method, which he called *endomyelographie* and suggested a surgical procedure in syringomyelia called the Puusepp operation (8). Ten years later, a total of 111 Puusepp operations had been performed in the world. This series is extensively reviewed by Martinoff in vol. 15/16, in the paper

entitled “Zur Frage der operativen Behandlung über Syringomyelie” (pp. 392–400). All these patients were operated on after Puusepp in 1926 had reported two cases on the neurological congress in Paris. Eight of the operations out of 111 described in Martinoff’s review were performed in Tartu. He concluded that the operation alleviates the symptoms in properly selected patients with hydromyelia.

The last, 17th volume came out in Tartu in 1939. In 1930 Puusepp had adopted Egas Moniz’s cerebral angiography. This opened new horizons in neuroradiology, among them diagnostics of intracranial aneurysms. In the 17th volume Puusepp’s assistant Martinoff published the paper “Über die topische Diagnostik der intrakraniellen Aneurysmen” (pp. 133–196). This article is a good description of probable etiology, clinical symptomatology and treatment of cerebral aneurysms. The surgical treatment of such lesions in Tartu at that time was ligation of the internal carotid artery in the neck.

Folia Neuropathologica Estoniana is probably not very well known among Westerners because most of the papers were published in German or French. A great change after World War II was the enormous impact of English as the *lingua franca*. However, there is definitely reason to be proud of Ludvig Puusepp and his journal.

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LUDVIG PUUSEPP – A PIONEER OF PSYCHOSURGERY

Toomas Asser

The range of neurosurgical problems treated by Professor Ludvig Puusepp is generally well known. For example, the operation for syringomyelia named after Puusepp, operations to relieve pain, the method for the elimination of brain tumors, the so-called physiological enucleation of brain tumors and the surgical treatment of epilepsy (1, 2). However, one of the fields that was of interest to Puusepp already during his early medical activities in St. Petersburg has been left without due attention. This is the surgical treatment of mental disorders or psychosurgery, where Ludvig Puusepp is considered one of the pioneers.

The interest of Puusepp in the possibilities of surgical treatment of mental disorders emerged already in the first years of his neurosurgical activities when neurosurgery was not yet an independent branch of medicine. After graduation from the St. Petersburg Academy of Military Medicine on November 13, 1899, Puusepp stayed in the academy to prepare for his professorship. On November 19, 1901, he delivered a speech at the annual meeting of the physicians of the St. Petersburg Clinic of Mental and Nervous Diseases, which made him the first person in Russia and in the entire world to justify the need for neurosurgery as an independent discipline (Fig. 1) (3). In his speech, he gave an extensive overview of the surgical methods that were used in the world at that time, systematized the main trends of neurological surgery together with his own critical comments and presented his program for the development of neurosurgery.

Puusepp divided the surgical operations performed on the nervous system as follows: (1) orthopedic surgery on muscles and (2) on

peripheral nerves; (3) sympathetic surgery on nervous systems; (4) on the spinal cord and (5) on the brain. Among the last group, he also discussed the possibility for surgical treatment of mental disorders.

Approaching the issue from a strictly scientific angle, clinical activity had to be based on the previous theoretical solution. The fundamentals of the psychosurgical approach were contemporary advances in neuroanatomy, physiology and also psychiatry.

In his report in 1901, Puusepp said: "The general anatomy of such an important organ as the brain has been known for a long time, but the precise location of different functional centers was determined only recently. The work of Flechig, Goltz, Broca, Hitzig, Horsley and Bechterew has opened new horizons for us in this dark field, but Macewen and Horsley were the first to use the data in the treatment of diseases of the brain laying thus the foundation of brain surgery. Not more than 15 years ago, the brain was considered surgically inoperable and every attempt to use surgery in the treatment of brain diseases reminded us of the words that according to Dante were written at the entrance to Hell: "Lasciate ogni speranza" ("Abandon all hope", *The Divine Comedy* by Dante). Knowing where the damaged place is, we have to choose the way that we have to take in order to reach the damaged place, i.e. we have to project the focus of the damage on the skull (3). Several methods and devices have been presented for this, the one we use is the encephalometer of Zernov (4). In skilled hands, this device gives very precise instructions and fully substitutes for all others."

In the same report Puusepp dwelt on the relationship between the mental abilities of people and influencing them surgically. "It seems to us that the opinion of Giacomini that explains idiocy with underdevelopment of the brain itself is much more than the theory of Virchow and the use of craniotomy in the treatment of idiocy today is permissible only in very limited cases. In Virchow's opinion, the cause of idiocy is the premature closing of the cranial sutures, which does not allow the brain to develop. Many surgeons and psychiatrists have objected to this opinion. Among others, Bergmann opposed the use of craniotomy in the case of microcephaly and idiocy claiming it to be similar to performing surgery on healthy but not very talented persons in order to provide free growth for their brain and thereby make them talented and clever."

Хирургія въ леченіи нервныхъ болѣзней ¹⁾).

Д-ра Л. М. Пуусепа.

«Скевндю, что невропатологія въ этомъ отношеніи переживаетъ переходный стадій, подобно тому, какъ переживала его въ оное время гинекологія съ акушерствомъ, глазами болѣзнями и еще такъ недавно гермония болѣзнями. Какъ известно, эти специальности сдѣлались постановлено хирургическими, иначе говоря, представители ихъ явились и хирургами въ предѣлахъ своей специальности — то же, безъ сомнѣнія, должно случиться въ ближайшее время и съ невропатологіей». (Изъ рѣчи, произнесенной проф. В. М. Гельперсомъ при освященіи новой клиники нервныхъ болѣзней 19 ноября 1897 г.).

«Ich hoffe auch für die Hirnchirurgie Vieles und Crosses, wenn ich zunächst nur Wenige und ausgewählte Fälle ihrer Thätigkeit empfehle. Der Erfolg, dessen sie sich in engeren Kreise versichert, wird ihres Reiches mehrer sein. (W. Bergmann. Die chirurgische Behandlung der Hirnkrankheiten 1899 г.).

Мм. Г.-ни и Мм. Гг.!

На мою долю выпала честь произнести рѣчь въ почтенномъ собраніи По предложенію многоуважаемаго профессора В. М. Гельперова, я избралъ для своей рѣчи интересующій въ настоящее время невропатологовъ вопросъ о хирургическомъ вмѣшательствѣ при нервныхъ заболѣваніяхъ. Понятно, въ тотъ незначительный промежутокъ времени, который представленъ въ мое распоряженіе, я не въ состояніи охватить вопроса во всей его ширинѣ и цѣлости, а принужденъ ограничиться только общимъ обзоромъ тѣхъ успѣховъ и важныхъ побѣдъ, которые въ настоящее время одержала хирургія въ леченіи нервныхъ болѣзней.

Почти съ каждымъ днемъ область примѣненія хирургической терапіи расширяется: въ настоящее время, буквально, гдѣтъ органа, куда бы ни проникалъ ножъ хирурга; понятно, что такое широкое примѣненіе хирургіи требуетъ отъ врача хирурга такихъ обширныхъ знаній, что уже становится невозможнымъ одному человѣку охватить всю массу самыхъ разнообразныхъ діагностическихъ и анатомическихъ тонкостей. Мало-по-малу цѣлые отдѣлы хирургіи или выдѣляются въ отдѣльныя специальности, напр., хирургія мочеполовыхъ органовъ, или же входятъ, какъ дополнительный методъ леченія въ тѣ или другія специальности (напр. гинекологія, дѣтская хирургія) и, мнѣ кажется, скоро пробьетъ часъ, когда невропатологъ eo ipso станетъ хирургомъ; будетъ онъ обязанъ не только быть знакомымъ со способами производства операцій, но и будетъ въ состояніи произвести ту или другую операцію въ области нервной системы.

¹⁾ Рѣчь, произнесенная въ годовомъ собраніи врачей клиники душевныхъ и нервныхъ болѣзней 19 ноября 1901 г.

Figure 1. The first page from Puusepp's speech on November 19, 1901.



Ludvig Puuswpp as a field surgeon in the Russo–Japanese war.

The first attempt in the direction of modern psychosurgery was made in 1891 by Gottlieb Burckhardt, who was a surgeon and director of the Institution of Mental Patients in Prefargier, Switzerland. For two years, Burckhardt had been trying to find new possibilities for otherwise incurable psychoses (5). Having decided to perform surgery on the patients, he noted: “None of the diseases was of traumatic origin, therefore the indication of surgery was purely psychiatric.” Based on the results of animal tests of his time and his clinical experience, he came to the conclusion that psychotic phenomena appeared to be partly the characteristics of the diseases of certain parts of the brain and that isolation of such areas should in such cases produce a clinical effect. One of the patients died and another developed post-surgical epilepsy. The psychotic symptoms of one of the patients did not decrease, but it became easier to take care of him.

Even though Burckhardt himself remained optimistic, there were no followers to his work and nobody else performed similar operations later.

The way Puusepp regarded the matter at that time is reflected in his speech delivered at the annual meeting of the physicians of the St. Petersburg Clinic of Mental and Nervous Diseases on November 19, 1901 (3). A quote from the speech: "Now I have to recall surgical intervention in the case of psychoses and progressing paralysis. When the nature of the disease was earlier associated with an increase in the pressure inside the cranium, it was advised to decrease the pressure by trepanation of the cranium, but today this method only has such historical meaning as trephination in the case of psychoses that do not depend on any injuries of the cerebral cortex, tumors or cysts. Burckhardt has made such experiments, whereas he refers to relief from psychoses even though there is no proof as of yet, because certain improvement

can also be achieved through treatment with medicaments without surgical intervention. On his patients, Burckhardt used severing of the third frontal gyrus and the second temporal gyrus, i.e. the presumed associative connections or the center of speech. Burckhardt argues that the patient who had been restless before the operation calmed down after surgery, that hallucinations disappeared and the patient recovered. The surgeon came to such conclusions on the basis of four cases, whereas one patient died 6 days after surgery. Broca and Maubrac say that no one has dared to follow the example of Burckhardt yet and that operations done in case of such symptoms have not taken us far from the time when Rolande de Parme treated the insane by trepanation of their skulls in order to release the vapors of the brain" (3).



Ludvig Puusepp as a Russian field surgeon.



Ludvig Puusepp in Venice. St. Petersburg period.

In the first issue of the *Psychiatric Review* of 1902, Puusepp published a short piece about surgery in mental institutions (6). The author emphasizes there that the mentally ill form a specific group of patients who need nurses and physicians who have received special training. But when surgery is performed on the mentally ill, these requirements are ignored and therefore not even the most elementary aseptic requirements are observed in mental hospitals. Keeping such patients in surgery clinics is impossible because of their main disease. The solution that Puusepp suggested was the establishment of surgery units at psychiatry units that would be managed by a surgeon. Puusepp also mentions that Prof. V. M. Bechterew had already drawn attention to the surgical treatment of nervous and mental diseases in 1897. He also mentions that such units have been established in some mental clinics in France. Puusepp refers to a collection of works about surgical treatment of the mentally ill titled *Chirurgie des alienes* where a description of such a unit can be found.

On December 31, 1909, Private Docent of the Imperial Military Academy L. Puusepp delivered a report at the III Congress of Native Psychiatrists in St. Petersburg, titled "About Surgical Intervention in the Mentally Ill from the Aspects of Ethics and Law" (7). The report on the congress shows that Puusepp's presentation did not evoke much discussion and that the objections made against it did not concern the essence of the issue.

Regardless of contradictory opinions on surgical treatment of the mentally ill, Puusepp remained interested in the subject until he performed surgery on three manic-depressive schizophrenics in St. Petersburg in 1910. The operations required severing of the connections between the parietal and frontal lobes perpendicularly to the longitudinal axis. He operated only unilaterally. Puusepp himself was not satisfied with the results of the operations and therefore did not continue with similar operations and did not publish the results. In the world literature, these three cases are the second known attempt at treating mental disorders that are non-traumatic or caused by other diseases by way of surgery after the first attempt of Burckhardt in 1891.

In the *Psychiatric Journal* No. 3, 1914, Puusepp published the article "Современное состояние вопроса и ближайшая задача хирургического лечения душевных заболеваний." (8, 9). In this article, he writes about mental disorders caused by brain traumas and non-traumatic epilepsy and the possibility of surgical treatment. The



Consultation in St. Petersburg.

surgical methods used for the treatment of epilepsy and the mental disorders that occur with it mentioned by the author are bilateral surgical removal of the cervical sympathetic ganglions, ligation of the carotid artery and resection of the cranium and the dura mater. Puusepp also noted the regression of mental disorders after the elimination of tumors. According to Puusepp, the method used for treating idiocy back then was placement of thyroid tissue in bone marrow, but none of the three operations had positive results. The author also gives examples of unsuccessful treatment of mental disorders occurring with myxedema and syphilis, but in this article, Puusepp no longer discusses non-organic mental disorders and surgical treatment thereof without referring to his own unsuccessful experiments four years previously.

The experiments of Burckhardt (1891) and Puusepp (1910) remained the only determined attempts at psychosurgery until the middle of the 1930s when the book by Egas Moniz (1936) about surgical treatment of mental disorders with surprising results was published (10). Only then did Prof. Puusepp publish his results in

Italy. His article (see Fig. 2) about his unsuccessful operations was published in 1937 (11). He was noting that “the success of the operation was rather poor, so that I no longer continued operations of this sort” (11). Puusepp did return to psychosurgery after the publication of Moniz’s apparently more successful results in the mid-1930s. The activities of E. Moniz continued until he was shot in the back by a not yet lobotomized patient. E. Moniz retired in 1944, being hemiplegic. In 1949, he and Walter Hess received the Nobel Prize for medicine and physiology “For discovery of the therapeutic value of prefrontal leucotomy in certain psychoses”. E. Moniz died in 1955.



Dacha in Karelia. St. Petersburg period.

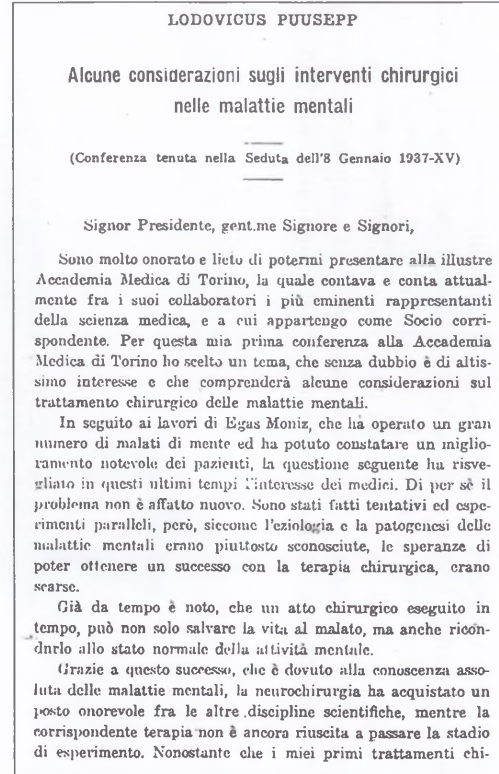
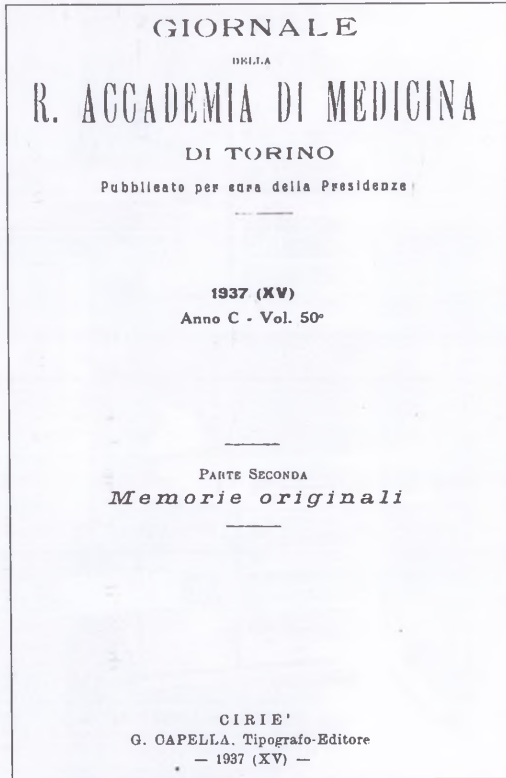


Figure 2. Puusepp's article about his psychosurgical attempts, published in 1937.

Puusepp corresponded with the Portuguese neurologist Egas Moniz. Five letters from this period are kept in the library of the University of Tartu. In the letter sent in 1932, Moniz writes: "Dear colleague and friend," adding among other things that Part I of Puusepp's *Die chirurgische Neuropathologie* is "an achievement the value of which will remain high for the entire century." Puusepp had been frequently communicating with Moniz already in earlier times. For example, the use of angiography of brain arteries as a regular examination method in the Nerve Clinic of the University of Tartu began in 1936 and this method had been developed by



Medical Major-General of Estonian defence forces.

Egas Moniz in 1927 (2). The reprint of Egas Moniz's article "Mioclonias de origem cortical" from 1927 together with the author's dedication has also been preserved (12).

Because of his continuing interest in the possibilities of surgical treatment of epilepsy and mental diseases, in 1936–1939 Puusepp repeatedly visited Dell Ospidale Neuropsichiatrico di Racconigi, which was the largest mental hospital in Italy back then. Puusepp performed 41 operations there and in 1938 analyzed the treatment results of ten patients who had been operated on because of epilepsy, of these he himself had performed five (13). The daily *Postimees* from February 6, 1937 writes that "it is planned to develop Dell Ospidale Neuropsichiatrico di Racconigi into the neurosurgical center of Italy, which is why they wanted to hear the opinion of the famous Estonian scientist". The trip of Prof. Puusepp to Italy was also reflected in *Uus Eesti*, which noted that after the operations performed in Racconigi, he delivered a report in the Academy of Turin. Referring to the article of Italian

Professor Carlo Enderle, Puusepp told *Uus Eesti* that the clinic in Tartu was unique in the world (what was obviously meant was the association of neurology and neurosurgery) and that “only small Estonia – *la piccola Estonia* – has it” (14).

Prof. Puusepp also attempted, unfortunately without success, to treat the tremor in Parkinson’s disease by severing the Burdach funicle. He also operated on injuries of the brachial plexus and was probably the first in the world to use severing of the anterior funicles in order to treat spasticity (15, 16). Because of these operations it is justified to consider Prof. Puusepp also one of the pioneers of functional neurosurgery.

Owing to his psychosurgical operations from 1910, Prof. Ludvig Puusepp has been noted in relevant handbooks and reviews (17, 18) and, with every reason, he is considered a pioneer of psychosurgery.

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PROFESSOR LUDVIG PUUSEPP AND THE ROCKEFELLER FOUNDATION

Ken Kalling

The *Estonian Encyclopaedia* writes in 1936: "... *The international R Foundation is giving notable support to the medical, natural and social sciences for the establishment of new institutions and the running of scientific research. It also distributes fellowships to promote new generations of scholars. Among others a number of young men of science from the University of Tartu have become fellows of the R Foundation.*" (1, p. 267)

The Rockefeller Archive Center in North Tarrytown, NY, contains information on these Estonian scholars. Although one cannot find the name of Prof. Ludvig Puusepp (1875–1942) among the nominees, his presence is constant and his name frequent in different connections. In fact, for the outstanding American institution, Prof. Puusepp can be viewed as one of the standard-bearers of Estonian sciences in the 1920s–1930s whose authority was perhaps the main factor behind the fellowships and grants for his team of neurologists, which received most of the support given by Rockefeller to Estonian medicine. The successful (if we take fellowships as the criterion of success) students and followers of Ludvig Puusepp were Ernst Weinberg, Johannes Riives, Voldemar Üprus and Samuel Zlaff, men of promising future but tragic fate due to the fatal turn in Estonian history during WW II.

The support the Rockefeller Foundation granted to Puusepp's team made up a notable proportion of the general assistance to Estonian sciences. Altogether, 24 Estonians became Rockefeller fellows. These were agricultural scientists, social scientists, chemists and medical personnel.

The aim of this work is to study what Estonian neurology and the clinic of Prof. Puusepp looked like from abroad, through a "foreign

eye". The study relies mainly on the materials kept at the Rockefeller Archive Center (2). Unluckily for the researcher, part of the materials kept there are not open to historians (the personal files of the Rockefeller Foundation fellows). In this way one has to rely more on indirect sources. There are materials concerning the aid to fellows who had returned to Estonia. These, besides dealing with the particular case of assistance, include hints to the closed files and contain analysis of the past scientific achievements of the candidates.

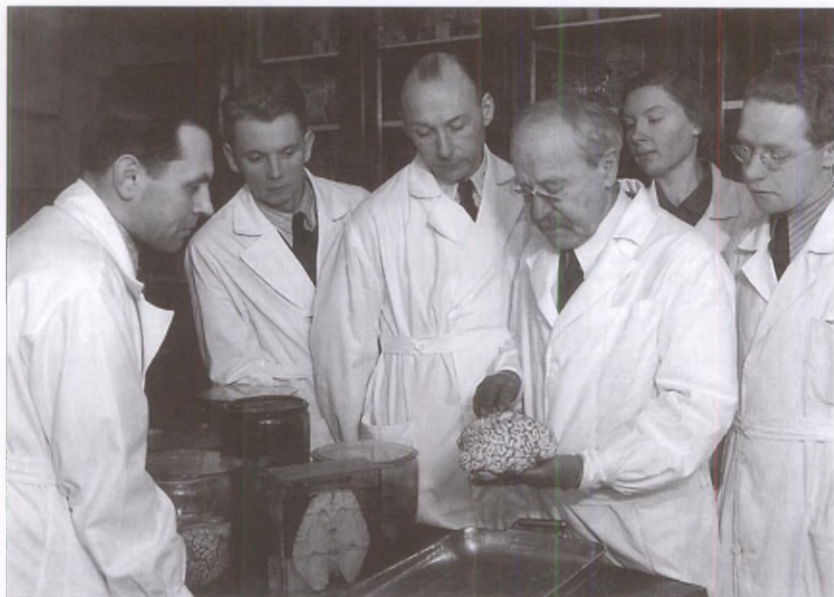
A special source at the archives is the diaries of the Rockefeller officers visiting Estonian scientific institutions and keeping contacts with Estonian scholars, but also interviewing the professors at whose institutions the fellows worked.

To fill some gaps in the information obtainable in the USA, the materials on the topic in the Estonian History Archive and in the Library of the University of Tartu were used.

American interest towards Estonia began after WW I, when Estonia had gained independence. The Rockefeller Foundation, established in 1913, saw as its goal the promotion of the well-being of mankind all over the world. WW I and its aftermath became a period of great activity for the Foundation. Its special concern was directed to the newly independent "border states" in Eastern Europe, believed to be (at least initially) rather unstable. The Foundation saw medicine in a strict social context. Social medicine and public health were to be the source of future welfare and stability. The situation in Eastern Europe was in its developmental phase, thus it needed attention in order to be directed towards the right path.

In cooperation with the League of Nations and the Red Cross, the idea was to build a new Europe, defending it not only from internal threats (nationalism, fascism), but also from those emerging from Soviet Russia. It was not only diseases but also the ideological nuisance of communism, which threatened from this direction, and was to be stopped by the East-European states. The so-called Sanitary Cordon emerged.

For Estonia and the other Baltic States the situation concerning assistance from the Foundation was not yet very favorable – the Americans viewed the three small countries with their relatively short tradition of self-government as the vestibule of Russia (3). Estonia thus did not fall into the group of countries where the Foundation established whole institutes. There remained smaller aid and fellowships.



Mentor and his staff. From left: Üprus, Raudam, Riives, Puusepp, Rivis.

The nominees had to be young (35 was generally the upper limit) and promising scholars, capable, when back in their homeland, to become the forerunners and organizers in their scientific fields. When further aid was under discussion, the success of the previous fellows had to be demonstrated.

One has to admit that Estonian sciences (as most of the rest of Eastern Europe) were not highly rated by the Americans. Academic life in post-WW I Estonia was complicated. Estonia was yet unlike Latvia and Lithuania, the two establishing their new national universities, respectively in Riga and Kaunas. At the University of Tartu the situation was quite different – this old academic center of the Russian Baltic Provinces was devaluating from a cosmopolitan academic facility into a national university. Many professors had left. On the other hand a number of educated men came back to Estonia, the land of their ancestors – Professor Ludvig Puusepp among them.

The contacts between the University of Tartu and the Rockefeller Foundation must have emerged in the spring of 1921 (Estonia declared itself independent in 1918, the War of Independence ended in

1920). From the beginning, medical education was the main field for which the Foundation offered help (4, Item 337, p. 3). The contacts were slow to develop (Estonian Ambassador to London has sent several memorandums (5)) and it was only since 1924 that there are materials concerning Estonian sciences in the Rockefeller Archives.

An important source is the diary of a Rockefeller officer, Alan Gregg, cited here through the abstracts copied by other officers. Gregg states that the Baltic universities are not outstanding. He could not see any scientific schools. A survey carried out by the Foundation in 1926 among European scholars brings mention to Tartu only once – the yet to become famous astronomer, Ernst Öpik, is mentioned.

Concerning Tartu, Gregg gives a rather interesting suggestion. In a way he digs out the idea of the Institute of Professors existing in Tartu between 1828 and 1838, preparing Russian scholars for their professorship in Russia under the German scholars of Tartu. Gregg sees the future of Tartu as an educational center for Russian (Soviet) people. The officer finds that the University in Tartu, where Russian is well spoken, should become a small (“one does not need a big machine to feed practitioners to a country of 1 200 000”) educational facility with good equipment. In medical sciences the emphasis should be on preclinical departments (6).

Finally, a total of four medical disciplines attracted the attention of the Foundation: histology (Harry Andreas Kull, fellow in 1925–1926), physiology (Maks Tiitso, 1925–1926), public health (Mihkel Kask, 1935–1936 – had been in the team of Puusepp during 1929–1930) and neurology (Ernst Weinberg, 1927–1929; Johannes Riives, 1931–1932 and 1936–1937; Voldemar Üprus, 1933–1934; Samuel Zlaff, 1938).

It has to be noted that for the Rockefeller Foundation Prof. Puusepp and his team became the main issue in Estonian medicine, and sciences in general, in the 1930s. (In 1933 W. Weaver states that besides Puusepp, there are two professorships in Tartu engaged in fundamental sciences – those of M. Tiitso and G. Barkan (7).) The 1920s saw the mentioning of Tartu neurologists less, although Ernst Weinberg was the first to receive a fellowship in 1927. However, an interesting tendency is evident – all the doctors from Tartu staying abroad as Rockefeller fellows sent long letters to Puusepp, giving detailed information on their conditions.

Dr. Ernst Weinberg's (1896–1946) interests were related to anatomy and indeed he, in 1931, became the Professor of Anatomy at Tartu

University. Before that, he had been in Puusepp's team. Weinberg used his Rockefeller fellowship for staying in Ann Arbor, at G. C. Huber in 1927–1928, and in Strasbourg, at Prof. Förster, during 1928–1929. Huber comments on him: "An unusually capable fellow, to whom I would immediately offer a position on my staff if this were at all possible under the R.F. program." When holding the Chair of Anatomy, Weinberg remained interested in the problems of neurology. His grant in aid, received in 1931 (US\$ 500), was to support his study into the "problem of the relationship between the *pars nervosa* of the *hypophysis cerebri* and the diencephalic centers." His assistant, Dr. Pärtelpoeg, was at the same time "trying to locate these ganglionic cell groups that give origin to nerve fibers stimulating the secretion of the lacrimal gland" (8).

At the end of the 1930s it was written that Weinberg is interested in (physical) anthropology, but continues histological studies of peripheral nerves (9, p. 24).

Dr. Johannes Riives (1895–1971) received a fellowship for neurosurgical work from Rockefeller in 1931 and stayed mainly with Dr. Adson in Mayo. Adson offered him a Mayo Foundation fellowship in neurosurgery, but Riives was intent on returning. Also Dr. Cushing saw Riives as a person with a bright future. In fact, Prof. Puusepp considered Riives to be his successor at the chair.

Riives received a grant in aid in 1933 (US\$ 760) to obtain apparatus "for the examination of all tumors of the central nervous system collected in the Tartu Clinic during the past eleven years", but also to start (together with Puusepp) the "study of epilepsy from the surgical, pathological and experimental points of view" (10). In fact, the aid was first requested by Puusepp in 1931, but finally given to Riives, as a past fellow. The fact of Puusepp's initiative nevertheless hints at a tendency according to which it was very much the personality of Puusepp that indirectly earned the support, although personally receiving no fellowships nor grants in aid from the Foundation.

Dr. Voldemar Üprus (1902–1956) received a fellowship and stayed in 1933–1934 mainly in Great Britain, at the National Hospital of London with Dr. A. Carmichael. He visited also Dr. Spielmeyer and Dr. Förster in Germany. Carmichael writes on him: "(We are) impressed with his ability and personality" (4, Item 149). His grant in aid came in 1936 (US\$ 1050). Before that, in 1935, a Rockefeller officer, R. W. Gerard, made a statement that if the team of Puusepp be

supported, then through the work of Üprus. The grant was meant “to contribute to the development of research in neuro-pathology ... on problems connected chiefly with the nervous control of sweating and vasodilatation and the innervation of blood vessels” (10). Üprus also needed apparatus. In 1938 it was written in the diaries that Üprus has a nice, although small, laboratory and a female assistant. “Üprus has been working statically on facial palsy; and has found that toxic shivering, following the injection of thyroid vaccine intravenously, occurs only when there is a peripheral leucopenia” (9, p. 23).

In 1936, the visiting officer, O’Brien, notes that Puusepp suggested support for two of his men: Riives, for a six month stay in London and at Olivercrona in Sweden, and Samuel Zlaff. The latter makes a good impression. Zlaff was a neurologist, specializing in roentgenology. He had been on the staff for 8 years. Puusepp wants him to get practice in roentgenologic diagnostics in Sweden at Lysholm and Olivecrona. In 1938 this plan succeeded. Already in 1936–1937 Riives made his study trip to Sweden, the UK and Germany.

In 1938 Puusepp mentions as a potential candidate supported by him for the Rockefeller scholarship his assistant Dr. Felix Raudkepp (1900–1986).

The work and activities of the Neurological Clinic of the University of Tartu were keenly observed by the Foundation. However, as time passed, there emerged remarks on the aging of Prof. Puusepp, the general attitude was impressive, although depending on the subjective impression of the officer. R. W. Gerard for example writes in 1935: “At Tartu there isn’t really much. Puusepp is a real character, but done. Riives is so quiet I got little impression on him...” (11). In 1938 H. M. Miller gives his comment: “P(uusepp) is still quite vigorous, and has around him a group of some 6 rather attractive and devoted young men, easily the most important of whom is first assistant and privat-docent Riives” (9, p. 22).

In 1936 in connection with giving Dr. Üprus a grant in aid, the Rockefeller officials write that during the last year great improvements had taken place concerning the working conditions at the department. The X-ray apparatus had been reconstructed (reaching the level Lysholm had in Stockholm) and plans were made for the reconstruction of the whole hospital (75–100 beds). Some organizational changes were also foreseen – to turn the Neurological Clinic into a Neurological Institute, attaching to the latter a hospital with the

departments of neurology, neurosurgery, roentgenology and electrophysiotherapy. The officers note that as his successor Prof. Puusepp sees Dr. Johannes Riives. Dr. Üprus was to take charge of the special research laboratory (10).

The forties made great changes in the future plans. The Soviet annexation in 1940 and the German occupation in 1941–1944 had a strong impact. So, the coming Stalinist years saw only Voldemar Üprus, from the scholarship holders, alive and in Estonia. However, he had to leave Tartu to become a doctor in N-E Estonia, the industrial region of the country.

Samuel Zlaff had been murdered by Nazis in 1941. Prof. Puusepp died in 1942. Prof. Ernst Weinberg left for Germany, and died there in 1946. Johannes Riives emigrated in 1944, and lived from 1948 on in Canada.

Not to end my article with an impression that the story of connections between the Rockefeller Foundation and the team of Prof. Puusepp was just a nice fairytale with a sad end, it would be important to stress that there were enough cases when the Foundation did not find it possible to support some of the plans that Prof. Puusepp had been running, i.e. that life was not just a constant fairytale.

In 1931 Puusepp asked support for the enlargement of his Hospital. The Foundation declared politely that medical facilities of this kind were not a priority for them. Knowing about the soon to be celebrated 300th anniversary of the University of Tartu (in 1932), the Foundation suggested the use of the big event to suck out money from the state (4, Item 576, p. 6).

In 1935 R. W. Gerard commented on a project on brain chemistry planned jointly by Prof. Puusepp and Prof. P. Kogerman. The idea was to study the organic *Fe*-compounds in the brain and their regional and pathological variations. The officer however found that the particular project “seems ... a rather artificially cooked up one”. Instead, the officer suggested the study of the unsaturated lipins, since he considered the latter to play an important role in neurochemistry (11). (In this case, perhaps Puusepp should not be blamed – it was probably Kogerman’s initiative, not discussed thoroughly enough.)

In 1936 the Foundation denied Puusepp support for publishing the third part of his *Die Chirurgische Neuropathologie*. The requested amount – US\$ 1660– was rejected as “the policy adopted would not permit the consideration of Your request” (4, Item 576, p. 14).



Prof. Puusepp after an operation among colleagues in Kaunas.



Consultation in Tartu. Standing from the left in white coats: Puusepp, Riives, Zlaff, Weinberg.

Much discussion went on concerning the hopes Prof. Puusepp had for the new Central Hospital that was erected in Tallinn at the end of the 1930s. The hospital was to contain the departments of surgery, neurology, endocrinology and narcology. Professor Puusepp had a plan to add to the new medical facility also the Institute of Neurology, which had to be a center of scientific research, medical education was to remain in Tartu. According to the preserved data, these plans were discussed around the Christmas of 1937 (9, p. 23). When in 1938 Prof. Puusepp asked for information whether the Foundation would finance such plans, he received a negative answer from O'Brien. The Rockefeller official expressed his attitude, according to which the center of neurological studies, especially neurosurgery, for the Baltic States should remain in Tartu: "P(uusepp) asks if there would be any likelihood of RF aid to the Institute at Tallinn. O'B(rien)'s answer is no" (12). At this moment O'Brien did not give his comment on the issue and explain it. Several years earlier (in 1933) there was however a summarizing comment from the same man: "The Clinic of Tartu is one of the well-known neurological departments in Europe, and attracts men from other countries working in that field. It is felt that the aid requested would contribute not only to the further scientific development of doctor Riives but to the advancement in Europe of a field in which the R.F. has a special interest" (10). In 1936 it was written: "The set-up in Tartu represents an unusual development and is likely to remain the center of Baltic States for neurology and neurosurgery" (10).

This attitude can be explained also by the fact that Prof. Puusepp seems to have been rather popular among foreign doctors. Rockefeller officers mention several names of foreigners practicing at the clinic of Puusepp in Tartu (12). It is not quite clear whether they were Rockefeller fellows. In 1934, the request of Puusepp to receive such people was rejected (4, Item 576, p. 5). When we rely on the Rockefeller Archives, then one person is discussed vividly – the colleagues of Puusepp complain in 1938 that Dr. Živkovič, from Yugoslavia, is not so much interested in scientific work, and is more after quickly obtaining the operating techniques (9, p 23).

Puusepp's team is engraved in the diaries of the Rockefeller officers also through the remarks that the Estonian side considered important to make on the activities and future plans of the Foundation. In 1938 Dr. Voldemar Ūprus found that it would be wiser for the Foundation to

support Estonian scholars by fellowships for visiting foreign facilities, not by the grants in aid. Yet Üprus at once stated that there are no good candidates among Estonian natural scientists and medical scholars for the fellows at the moment (1938) (9, p. 25). The Estonians who managed to study as the fellows of the Rockefeller Foundation without doubt gave an enormous contribution to the development of Estonian sciences.

When drawing conclusions, it should be stressed that, especially for smaller countries and scientific communities, it is important to know how we appear from a distance, what other people think of us. Leaving a good impression is also an important achievement in sciences. The task is easier, if the preceding academic generations have already contributed to it. The role of Prof. Ludvig Puusepp in this sense cannot be underestimated – he was a real Patriarch of Estonian medicine in the inter-war period, his team acting as an envoy of Estonian sciences. His work is carried on at a worthy level.

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PROFESSOR LUDVIG PUUSEPP AS A PROMOTER OF SCIENTIFIC CONTACTS BETWEEN ESTONIA AND FRANCE

Asko Varik

One of the most renowned Estonian scholars in medical sciences, Professor Ludvig Puusepp (1875–1942), was involved in a broad spectrum of social activities. This famous neurologist became much appreciated for his Francophilic activities in Estonia between the two world wars. This article investigates the role of Prof. Puusepp as a promoter of Franco–Estonian scientific contacts.

Ludvig Puusepp's contacts with France

Most probably, Ludvig Puusepp's scientific contacts with France emerged in 1900, when he received tuition as a junior doctor, under the neurologists and surgeons of Paris. However, his work at the French Clinic of St. Mary and Magdalen in St. Petersburg may be even more valuable. From this period arose his later profitable acquaintances among French diplomats and doctors (1, pp. 28, 41). Connections with France became even closer in the 1920s, after Puusepp had returned to his homeland. In Estonia, Puusepp became one of the leading popularizers of scientific contacts with French scholars. It must be noted that, in general, scientific visits to France were rare among the Estonian academic community. The number of Estonian scientists willing or able to make Estonian science and its achievements sound loud in France was even smaller. Ludvig Puusepp, with great dedication, started to fill this gap. During his annual trips abroad, Puusepp often visited France, lecturing and participating at different congresses. Between 1922 and 1933 he

regularly gave presentations at the Annual Congress of Neurologists, where he was also constantly elected Honorary President (2, p. 41). Besides that, Puusepp was a member of at least six scientific associations in France (3). Apart from presentations, Puusepp frequently published in French or in French scientific periodicals. By 1936, almost one third of all scientific publications by Estonian medical scientists in French were the contributions by Ludvig Puusepp. If only foreign publications were counted, this ratio could be even higher (2, pp. 43–47). The journals in which Prof. Puusepp most often published were *Revue Neurologique* and *La Presse Médicale*. The merits and importance of Puusepp for Franco–Estonian ties are well characterized by the four French honours awarded to him. A great acknowledgement is the bestowment of the title of the *Chevalier de la Légion d'Honneur* to Prof. Puusepp in 1924 and his promotion in 1927 to an *Officier de la Légion d'Honneur* (2, p. 43). However, from the aspect of French–Estonian relations the activities of Prof. Puusepp in Estonia can be considered the most valuable.

The establishment of the French Scientific Institute

According to the memoirs of Prof. Puusepp, the reason why he established the French Scientific Institute in Tartu was the then dominating German cultural influence in Estonia. Puusepp admitted that “it was an urge to acquaint our broader masses, especially scientists, with French culture and the state of scientific achievements within this realm” (4). The idea for establishing a French Scientific Institute in Tartu, already growing in Puusepp’s mind since 1921, became ripe after he met the then French Ambassador to Estonia, Andre Gilbert, an old acquaintance of his from the years in St. Petersburg. In 1922 Puusepp asked Gilbert for financial support for the planned Institute, for the purchasing of books, for a fellowship, grants to support scientific excursions, and for a French language teacher to be sent from France to Tartu. Gilbert in general supported Puusepp, but he could not satisfy all these, for Estonia rather new and extraordinary, requests. Thus, the search for understanding and support from the French, concerning different funding, remained to a great degree on the shoulders of Puusepp (4). Thanks to his international renown, but also the kindness of the French, the consultations ended positively.



Enlightening the French Ambassador to Estonia Louis De Vienne in his hospital.

The annual subsidies of the French Government were of vital importance for the survival of the Institute. Initially small sums of support grew in parallel with the growth of the activities of the Institute, finally reaching up to 90% of the Institute's total income (5, pp. 1395, 1406).

In a similar way the initially modest book donations finally led to the formation of the biggest French language library in the Baltic States, which held 8268 books and more than 1000 issues of periodicals in 1940. The library can be considered to be one of the biggest of its kind in Eastern Europe. Its users from Finland, Latvia and Lithuania confirm that the importance of the library crossed not only the borders of Tartu, but even those of Estonia. The versatility of the collection (when books were obtained, the needs of the university departments were taken into account) and the greater role of the French language in international sciences at that time made the library of the Institute valuable for the educational and scientific work of the University of Tartu (6, p. 7).



Summer holidays in Narva- Jõesuu.

Keeping in mind the underdeveloped scientific and educational contacts with France and the limited possibilities that the University could grant by its own fellowships, the support provided by the Institute proved to be highly valuable for the continuation of the studies of academic staff and postgraduate students in the scientific surroundings of France. The greatest achievement brought about by the fellows must be the increasingly tight contacts between Estonia and France, particularly in the field of medicine. The frequent division of medical fellowships into two parts (both lasting from 4 to 5 months) enabled a total of 13 doctors to be sent by the Institute to France. Their “fascination with French civilization and medicine” had important results for the Estonian medical profession. The fellows of the Institute created an interest towards France among the Estonian medical doctors, as a result of which about 10% of Estonian doctors visited this country (2, pp. 39–40). The rather large number of fellows popularized French sciences but also contacts with France on a broader scale. When the generally Germanophilic cultural context of Estonia is taken into account, this is not so few...

Although Puusepp did not manage to find French support for the planned annual excursions to France, the four which did take place (in 1922, 1923, 1925, 1930) fulfilled their task of exposing France to Estonians as a remarkable center of science and culture. The participants in the excursions found an opportunity to reappraise their stereotypes (Paris as a center of “easy life”) concerning this country. The French, in their turn, could get more direct information about Estonia and Estonians. For spreading information about Estonia, perhaps the most important excursion was the first one, with its almost semi-official character, which received much attention by the French press (7).

The French language teacher sent to Estonia on the request of Prof. Puusepp, Lucien Rudrauf, became an outstanding popularizer of French culture in Tartu, later also in Tallinn. After Puusepp stepped down from the presidency of the Institute, the leadership unofficially went to Rudrauf. It was also Rudrauf to whom the Institute owed its valuable collection of art (slides etc.) (8, pp. 76–82).

The priority of medical connections

Prof. Puusepp together with his followers understood, it seems, that the goal of the Institute, as put in the Statutes, to “Bring together Estonian scientists and their French colleagues,” (9) primarily meant the developing of Franco–Estonian connections in the field of medicine. It is quite understandable that the Board of the Institute was dominated by medical doctors – it had been established on the initiative coming from the Medical Faculty (4). In 1932 doctors made up 34% of the membership of the Institute, being the largest professional group represented (10). Later too the Institute remained attractive for doctors. Medical personnel not only from Tartu, but even from as far as Saaremaa, were members. It may have been that in those times doctors were in general more addicted to France – even one of the first doctors of Estonian background, Philipp Karell, had contacts with that country – but most probably the interest originated from the notorious medical inclination the Institute possessed. The proportion of the activities of the Institute related to fields of medicine could be said to be somewhere around 40% during the period when Prof. Puusepp was President (in the years 1922–1929). In its initial years, this was the result of the activity

of Puusepp reflected in the work of the medical section of the Institute. In the second half of the 1920s the domination of doctors started to decline. This does not mean that Puusepp's contacts with France were diminishing or had been severed. Quite the contrary, in the 1930s the ties with French medical scientists had become so close that several of the then world-famous French medical scholars (Dr. Noël, Dr. Armand-Delille, Dr. Claoué) visited Estonia and lectured here (8, pp. 124–125).

There is a strong temptation to characterize the processes within the Institute by the particular practice run by Prof. Puusepp and his followers to nominate only doctors for the fellowships granted by the French Government to the Institute. One has to admit that this was an arbitrary decision of the leadership and unfair to the non-medical representatives of the Institute. Only in 1928, when two fellowships were available, were representatives from other fields than medicine nominated for them. Sooner or later the situation had to create bitterness towards Prof. Puusepp. The emphasis the Institute placed on medical sciences in the 1920s was strong, giving an impression as though the Institution was a medical organization. According to its Statutes and the specialties of its members, the Institute was of course dedicated to a much wider spectrum of activities. The fact that the Institute under the guidance of Prof. Puusepp paid so much attention to medical sciences and saw as its first priority the development of Franco–Estonian medical relations can explain the popularity of the Institute among doctors.

Regardless of difficulties

By establishing a French Institute in a Germanophilic environment Prof. Puusepp took upon himself a task that was greater than he had anticipated. The acute French–German contradictions, stressed also by the local Baltic-German press, exited the society and poisoned the atmosphere in Estonia too (8, pp. 100–103). Estonians seemed to accept German propaganda easily. In such conditions the activities of the Institute were on the one hand needed, but on the other hand were rather difficult and risky. One should not forget that the Institute was the first and, for nine years, the only academic facility at the University of Tartu that propagated foreign culture. For a lengthy period it alone had to carry the burden of importing the atmosphere of Western Europe to

Tartu, diversifying the scientific orientation here. The most important parallel institution to the French Scientific Institute in Tartu was the Anglo–Estonian Society, which was not founded until 1931. The French Institute, when taking the then prevalent attitudes into consideration, could thus be viewed as an alien body, even an anomaly, in the midst of Germanistic turbulences. The anti-French attacks, either directly or indirectly, influenced the activities of the Institute. The potential circle of members became narrower, the audiences of the events organized by the Institute diminished, and it seems that, within the Institute itself, certain tensions and an unhealthy atmosphere emerged.

In addition, the authority of Prof. Puusepp was diminished by his poor knowledge of the Estonian language, particularly when he first arrived in Estonia. For example, the celebration of the 300th anniversary of Molière in a rather Russian mood precipitated a letter of protest by 15 influential members of the Institute, published also in the press (5, pp. 1397–1398). Behind this outburst one can imagine a broader protest against the Russophilic President (leadership of the Institute). For Prof. Puusepp an even bigger problem was the growing need and demand for more emphasis on French culture and French spirit. This aspect, although stressed in the Statutes of the Institute (9), was not a priority for Puusepp. The changing times (growth of Germano-phobia in Estonian society and respective increase in the popularity for French culture) demanded changes to be made in the priorities of the Institute. It seems that Puusepp was not ready for that. Perhaps he did not have enough time for sufficient dedication. At the turn of the 1920s and 1930s a rapid development seems to have taken place, at least in the plans concerning medical sciences in Tartu, in which Puusepp was actively involved. The plans to make changes in the Statutes of the Institute caused Prof. Puusepp to step down from the position of the President of the Institute. The priority of the new board was already the spreading of French “arts”, not so much sciences.

The importance of Prof. Puusepp for the French Scientific Institute

Of the many ways in which Prof. Puusepp was important for Franco–Estonian ties, his role as the founder of the French Scientific Institute in Tartu in 1922 can be viewed as the most important. The

support that he organized from the French Government granted the survival and successful activity of the Institute. The long period of existence (19 years), the significant number of academic staff and educated people in Tartu joining the Institute, and the great role the Institute played in spreading French culture and the teaching of the French language (besides the scientific contacts it promoted) show the Institute to be the most important French cultural society in Estonia. One can see, first of all, Prof. Puusepp behind the popularity and even boom of the French cultural phenomenon in Tartu in the late 1930s, for which the foundation had been laid in the 1920s. The achievements of Prof. Puusepp are even more valuable and noteworthy if we take into account the often hostile atmosphere and the fact that the two French cultural societies located in Tallinn died out.

The role of Prof. Puusepp in developing the medical connections between the two countries and raising the popularity of France among Estonian doctors is enormous. Puusepp was also one of the few Estonian scholars capable of maintaining the authority of Estonian sciences and spreading knowledge about Estonia in France.

The merits and achievements of Prof. Puusepp make him the most outstanding Estonian Francophile of the 1920s.

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Cartoon by an unknown patient.